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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/072,345	10/23/2001	Joshua I. Pine	00CXT04341	4259

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EXAMINER

VIEAUX, GARY

ART UNIT	PAPER NUMBER
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2612

DATE MAILED: 02/08/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/072,345	PINE, JOSHUA I.	
	Examiner	Art Unit	
	Gary C. Vieaux	2612	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 September 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 6-13, and 15-19 is/are rejected.
- 7) ☐ Claim(s) 5, 14 and 20 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Amendment

The Amendment filed September 8, 2005 has been received and made of record. In response to the Office Action dated July 15, 2005, claims 1, 5, 8, 14, 15, and 20 have been amended.

Response to Arguments

Applicant's arguments with respect to claims 1-4, 6-13, and 15-19 have been considered but are moot in view of the new ground(s) of rejection.

Specification

The disclosure is objected to because of the following informalities: the word "shift" is misspelled as "sift" on line 22 of page 7. Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3, 7-9, 12, 15-16, and 18 are rejected under 35 U.S.C. 102(b) as being anticipated by Yamada et al. (US 5,754,226.)

Regarding claim 1, Yamada discloses a method for increasing image resolution in which two or more images are captured (col. 7 lines 20-21), correlated by determining the corresponding pixels of the other images (fig. 1, col. 8 line 16 – col. 9 line 34), and combined into a single enhanced image in which the final resulting image is of greater resolution than each of the contributing images (col. 9 lines 36-48.)

Regarding claim 2, Yamada discloses all of the limitations of claim 2 (see the 102(b) rejection to claim 1 supra) including disclosing interpolation of pixel values (col. 6 lines 11-13.)

Regarding claim 3, Yamada discloses all of the limitations of claim 3 (see the 102(b) rejection to claim 1 supra) including disclosing imaging via a CCD (col. 11 lines 25-26.)

Regarding claim 7, Yamada discloses all of the limitations of claim 7 (see the 102(b) rejection to claims 1 supra) including disclosing wherein the imaging array is monochrome (col. 8 lines 16-18, col. 18 lines 25-26.)

Regarding claims 8 and 15, although the wording is different, the material is considered substantively equivalent to claim 1, as discussed above.

Regarding claims 9 and 16, Yamada discloses all of the limitations of claims 9 and 16 (see the 102(b) rejection to claims 8 and 15, respectively, supra) including disclosing means for transmitting an instruction to capture and transmit additional images (col. 11 line 63 – col. 12 line 4.)

Regarding claims 12 and 18, although the wording is different, the material is considered substantively equivalent to claim 3, as discussed above.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 4, 13, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamada et al. (US 5,754,226) in view of Examiner's Official Notice.

Regarding claims 4, 13 and 19, Yamada discloses all of the limitations of claims 4, 13 and 19 (see the 102(b) rejection to claims 1, 8, and 15, respectively, supra) except for disclosing wherein the array is comprised of complementary metal oxide semiconductor (CMOS) sensors.

Nevertheless, Official Notice is taken regarding the use of a CMOS sensor for image sensing purposes; a concept that is well known and expected in the art. It would have been obvious to one of ordinary skill in the art at the time of the invention to employ a CMOS sensor in place of the CCD for the purposes of power efficiency or for the ability to add on-chip computing capabilities.

Claims 6, 11 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamada et al. (US 5,754,226) in view of Okada et al. (US 6,727,954.)

Regarding claims 6, 11 and 17, Yamada discloses all of the limitations of claim 6, 11 and 17 (see the 102(b) rejection to claims 1, 8, and 15, respectively, supra) except for disclosing wherein the successive time interval is between 10 ms and 100 ms.

Nevertheless, Okada discloses a camera and image processing system where three successive images are captured at intervals of 100 milliseconds (col. 5 lines 46-50.) It would have been obvious to one of ordinary skill in the art at the time of the invention to specify in the system of Harada a time interval of 100 milliseconds as taught by Okada for the benefit of defining small time intervals to eliminate blurring the images, as well as assist in avoiding large translational changes in motion.

Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamada et al. (US 5,754,226) in view of Harada et al. (US 6,108,036.)

Regarding claim 10, Yamada discloses all of the limitations of claim 10 (see the 102(b) rejection to claim 8 supra) except for disclosing determination of when the additional image is required and means for generating the instruction when it is determined that an additional image is required.

Nevertheless, Harada teaches a similar image enhancing device that disclosing a user selected mode to instruct additional image capture (col. 6 lines 52-53, col. 7 lines 16-38, col. 25 lines 8-12.) It would have been obvious to one of ordinary skill in the art at the time of the invention to include the ability to determine when additional images would be required and then generate the related instructions as taught by Harada with the image enhancing device as taught by Yamada, so that a user could have the option of controlling image resolution.

Allowable Subject Matter

Claims 5, 14, and 20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Regarding claims 5, 14, and 20, the prior art is not found to teach or fairly suggest, in combination with the claims from which dependences are derived, correlation that includes multiplying values of shifted pixels and the corresponding pixels of the other images to generate a plurality of products, generating a squared sum of the plurality of products, and obtaining the highest squared sum of the plurality of products.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Contact

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gary C. Vieaux whose telephone number is 571-272-7318. The examiner can normally be reached on Monday - Friday, 8:00am - 4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, NgocYen T. Vu can be reached on 571-272-7320. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Gary C. Vieaux
Examiner
Art Unit 2612

Gcv2


NGOC-YEN VU
PRIMARY EXAMINER